

Before You Read

Before you read the chapter, think about what you know about these topics. List three things that you already know about motion, forces, and simple machines in the first column. Then list three things that you would like to learn about these topics in the second column.

[illegible]

FOLDABLES™

Study Organizer

Construct the Foldable as directed at the beginning of this chapter.

Science Journal

Write a paragraph comparing the motion of a ball and a paper airplane being thrown high in the air and returning to the ground.

[illegible]

Motion, Forces, and Simple Machines

Section 1 Motion

Scan the headings in Section 1 of your book. Identify three topics that will be discussed.

1. _____
2. _____
3. _____

Review Vocabulary

Define meter using your book or a dictionary.

meter

New Vocabulary

Use your book to define the following terms.

average speed

instantaneous speed

velocity

acceleration

Academic Vocabulary

Use a dictionary to define exert to show its scientific meaning.

exert

Section 1 Motion (continued)

Main Idea

Details

Speed

I found this information
on page _____.

Skim the section, and create a graphic organizer that identifies three different ways speed can be described.

I found this information
on page _____.

Complete the equations to show how to calculate average speed and distance.

Calculating Average Speed

$$\text{speed (in m/s)} = \frac{\boxed{} \text{ (in m)}}{\boxed{} \text{ (in s)}} \quad s = \frac{\boxed{}}{\boxed{}}$$

Calculating Distance Traveled

$$\text{distance traveled (in m)} = \boxed{} \text{ (in m/s)} \times \boxed{} \text{ (in s)}$$

$$d = \boxed{}$$

Velocity

I found this information
on page _____.

Identify the factors that affect velocity.

Velocity changes when

Section 1 Motion (continued)

Main Idea

Acceleration

I found this information
on page _____.

I found this information
on page _____.

Details

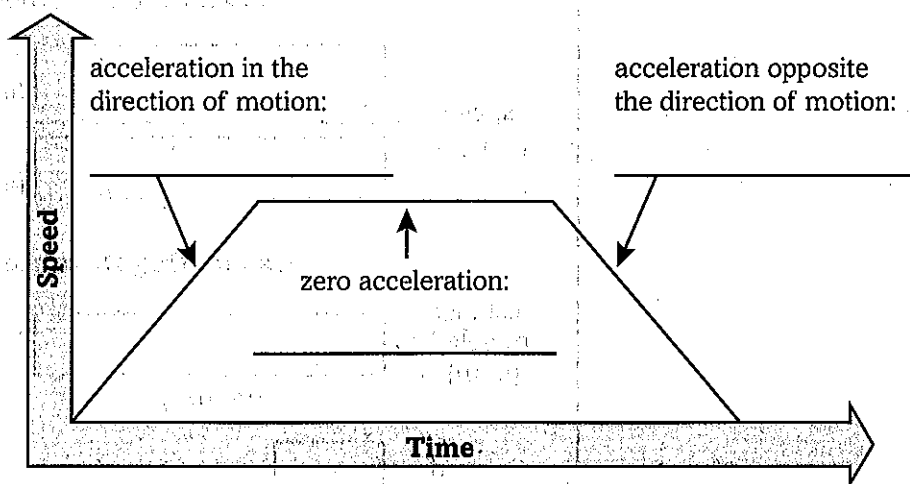
Complete the equations to show how to calculate the acceleration of an object that changes speed but not direction.

Calculating Acceleration

$$\text{acceleration (in m/s}^2\text{)} = \frac{\boxed{} \text{ (in m/s)} - \boxed{} \text{ (in m/s)}}{\boxed{} \text{ (in s)}}$$

$$a = \frac{\boxed{}}{\boxed{}}$$

Compare changes in the speed of an object by identifying what is happening to the speed during each segment of the graph.



CONNECT IT

Explain how you can use your watch and a car's odometer to determine the average speed of a trip by car.
